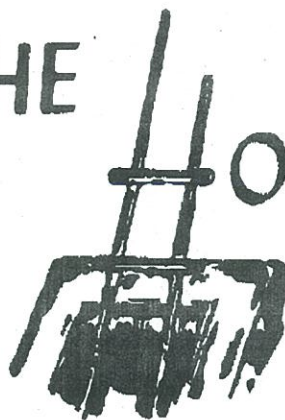


THE HOPI TRIBE



CHAIRMAN

Todd Honyama Sr.
VICE-CHAIRMANWATER RESOURCES PROGRAM
FAX: (928) 734-3609STAFF NUMBERS
UBERTA MOWA (928) 734-3713

NAT A. NUTONGLA (928) 734-3711

NUMBER OF PAGES FAXED INCLUDING THIS COVER

PAGE: 24DATE FAXED: 5/15/07TO: Elizabeth StahlFROM: Uberta MowaFAX NUMBER: 415-947-3554

MESSAGE: Bessie Lee approved the Hopi Tribe
request of a new work plan. There has been
changes made to the budget also. Will there
be a new modification send to the Hopi Tribe?

SHOULD THERE BE A PROBLEM IN RECEIVING THE
DOCUMENT(S) PLEASE CONTACT EITHER ONE OF THE STAFF
LISTED ABOVE.

5/16/07
called B. Lee
+ U. Mowa
Version -
no amendment
needed

THE HOPI TRIBE



RECEIVED
7 MAR 2007

CHAIRMAN

Todd Honyama Sr
VICE-CHAIRMAN

February 28, 2007

Ms. Bessie Lee
Drinking Water Office (WTR-6)
US EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Ms. Lee,

The Hopi Tribe's Water Resources Program is submitting a revised workplan for the Villages of Moenkopi (Upper and Lower) Drinking Water Tribal Set Aside Grant No. FS-98969501. The original work plan was based on the assumption that a water supply from the Navajo sandstone aquifer (N-aquifer) would provide the water source needed by the villages. It was soon determined that the N-aquifer would not yield a sufficient quantity. An exploration well was drilled into the Coconino sandstone aquifer (C-aquifer), that yielded sufficient quantity but poor quality water. Water quality of the C-aquifer exceeds secondary maximum contaminant levels (MCLs) for total dissolved solids (TDS), chloride, sulfate, manganese and iron. Therefore, C-aquifer well water must be treated prior to use as a water supply.

The original work plan did not anticipate the substantial increase in cost and time associated with the need for water treatment. The original workplan also did not include administrative costs for project management. The Water Resources Program now finds the need to employ a salaried professional position to manage the project schedule as critical to completing this project in a timely manner. Therefore, allowable administrative costs are now incorporated to provide salary and fringe benefits for a part time salaried position within the WRP.

Your review and approval of the attached workplan, including the revised schedule and budget would be greatly appreciated, in order to proceed to completion of the project schedule.

Sincerely,


Todd Honyaoma, Vice Chairman

Concurred:


Bessie Lee, DWTS Project Manager

Date: 13 May 2007

Attachment: revised workplan

REVISED WORK PLAN

February 2007

**The Hopi Tribe, Water Resources Program
Villages of Moenkopi (Upper and Lower)
Drinking Water Tribal Set-Aside Grant FS-98969501
Project and Budget Period:
October 01, 2000 to November 30, 2009**

I. PURPOSE AND NEED

The Village of Moenkopi (Lower) and Upper Village of Moenkopi's water systems currently pose a health threat to village residents. The Village of Moenkopi (Lower) has been faced with serious health problems caused by microbiological contamination within its public water supply system. Over time, the health threat to residents of both villages is expected to increase due to groundwater contamination upgradient of the municipal water sources. Groundwater contamination sources include two leaking underground storage tanks, the Tuba City Landfill, and an abandoned uranium mill tailings site.

In 2000, the Hopi Tribe was awarded a Drinking Water Tribal Set-Aside grant from the U.S. Environmental Protection Agency (EPA) for the amount of \$1,259,000. The Water Resources Program (WRP) is submitting this revised work plan, schedule and budget to EPA to continue implementation of work plan objectives. The justification to extend the project is based on complications in the completion of some of the tasks of the original work plan. The original work plan was based on the assumption that a new well in the Navajo sandstone aquifer (N-aquifer) would supply the additional water source needed by the villages. Water from the N-aquifer is usually of a very high quality and usually produces an adequate yield for the purposes of this project. Upon drilling, it was discovered that the N-aquifer would not yield a sufficient quantity.

A new well was drilled into the Coconino sandstone aquifer (C-aquifer). The initial pump tests of this C-aquifer well produced yield of sufficient quantity and resulted in a decision to develop the C-aquifer well. Although the water quality exceeded secondary maximum contaminant levels (MCLs) for high total dissolved solids (TDS), chloride, sulfate, manganese and iron, the water can be treated for use as a long-term water supply. The original work plan did not allow for the substantial increase in cost and time associated with the unexpected need for water treatment.

II. GOALS AND OBJECTIVES

The Hopi Tribe intends to achieve significant environmental results in compliance with EPA's Strategic Plan in the protection of human health. Upon completion of the components of this revised work plan, the following goals, objectives and sub-objectives identified in EPA's Strategic Plan will be met:

- Goal 2 (Clean and Safe Drinking Water), Objective 2.1 (Protect Human Health), Sub-Objective 2.1.1 (Water Safe to Drink), and
- Goal 5 (Compliance and Environmental Stewardship), Objective 5.3 (Build Tribal Capacity).

III. ENVIRONMENTAL RESULTS AND OUTCOMES

Upon completion of the components and tasks of the revised work plan, the Moenkopi Villages will:

- receive drinking water that meets primary and secondary drinking water standards,
- have a community water system operating with a minimized risk to public health through source water protection strategies, and
- continue to reduce the number of households in the Lower and Upper Villages lacking access to safe drinking water.

IV. BACKGROUND

The Upper Village of Moenkopi (PWSID #0400104) has three water supply wells completed in the lower portion of the N-aquifer. All three wells are spaced within 500 feet of each other and provide a combined yield of 76 gallons per minute (gpm), which is inadequate for the needs of the village. In addition, an abandoned uranium mill tailings site and uranium waste in the Tuba City Landfill threatens the safety of the N-aquifer water supply captured by the Village's three wells.

The Village of Moenkopi (Lower) (PWSID #0400393) relies on spring fed discharge from the unconfined N-Aquifer, and stores the water in a spring box for distribution into the water delivery system. The Village has been faced with serious health problems caused by microbiological contamination. Two leaking underground storage tank (LUST) sites also pose a threat to the Village's water source. Residents of Lower Moenkopi are without indoor plumbing. Village residents access water from five public water hydrants located in various locations of the village. The presence of allotted lands prevents the installation of new water lines that would be necessary to provide additional service connections to individual households.

WRP implemented water exploration activities during the initial phases of the approved work plan. A new well was drilled into the N-aquifer for the purpose of providing an additional source of safe drinking water to both villages. Due to the insufficient yield of less than 10 gpm, additional funding was provided by the U.S. Bureau of Reclamation (BOR) to drill an additional well into the N-aquifer and a well into the C-aquifer. Of the three wells that were drilled, only the C-aquifer well yielded a sufficient quantity of water. However, water from the C-aquifer is high in TDS, chloride, sulfate, manganese, and iron. As a result, the water must be treated to meet drinking water standards. The need to treat the C-aquifer water resulted in the need to modify the project work plan, budget and schedule.

V. WORK COMPLETED TO DATE

With project funding from EPA, WRP drilled one well into the shallow N-Aquifer (Figure 1). The well was completed to a depth of approximately 300 feet below ground surface. The well produces a yield of less than 10 gpm. With funding from the U.S. BOR, WRP drilled two additional exploration wells for the purpose of providing Upper and Lower Moenkopi Villages with an additional source of safe drinking water (Figure 1).

- An exploration well was drilled into the N-Aquifer south of the project area but is too far removed from the population center and would require extensive infrastructure improvements that significantly exceed the approved funding.
- An exploration well was drilled into the C-Aquifer to a depth of approximately 3,210 feet below ground surface. The well is capable of sustained yield producing greater than 100 gpm.

However, the well will require treatment to reduce the TDS of 3,610 milligrams per liter (mg/L) to aesthetic limits for use as a domestic water supply.

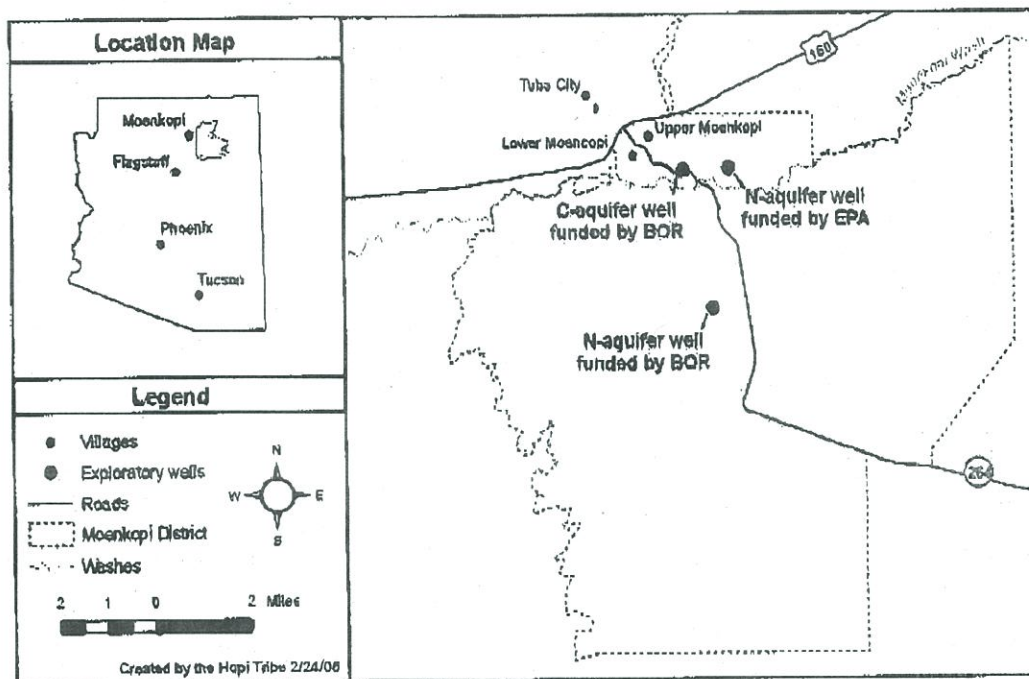


Figure 1. Location of exploration wells drilled with funding from U.S. EPA and BOR.

Water System Feasibility Study for Upper and Lower Moenkopi, Arizona (1999)

WRP contracted with Daniel B. Stephens and Associates (D.B. Stephens) to complete an analysis of the public water systems that serve Upper and Lower Moenkopi. The study was used as part of a grant application for the EPA Drinking Water Tribal Set-Aside Grant program. Four alternatives for addressing the Villages' water concerns were prepared. Alternative 4 was selected as the recommended alternative based on EPA criteria and other Tribal concerns. Alternative 4 consists of drilling two new water supply wells, consolidating the Upper and Lower Village public water systems, creating a water distribution loop in Upper Village and upgrading the water distribution system in Lower Moenkopi.

Archaeological Survey and Cultural Resources Inventory Report for New Water Main Lines and Wells Construction, Moenkopi Villages, Hopi Indian Reservation, Coconino County, Arizona HCPO Report Number 2000-095 (January 2001)

The Hopi Cultural Preservation Office (HCPO) surveyed the project area for the presence of historic cultural debris, resource areas, and/or traditional cultural places. The project area consisted of the C-aquifer well site, the N-aquifer well site north of Moenkopi Wash and 2.5 miles of proposed water line with a corridor width of 50 feet. It was recommended that the pipeline be re-routed within the disputed area to avoid a kachina resting place if land jurisdictional issues are resolved.

Addendum: Archaeological Survey and Cultural Resources Inventory Report for New Water Main Lines and Wells Construction, Moenkopi Villages, Hopi Indian Reservation, Coconino County, Arizona HCPO Report Number 2000-095a (April 2001)

Because of the discovery of a traditional cultural place along the original water line alignment, the water line was re-routed. Under this addendum, the new alignment was surveyed. No historic cultural debris or recognizable traditional cultural places were identified.

Environmental Assessment (June 2001)

The environmental assessment (EA) was completed by Environmental Assessment Services in 2001 and underwent an extensive review and comment period by Federal and State agencies and the village public. Alternative 4 as outlined in the D.B. Stephens feasibility study (1999) was the preferred alternative. The EA concludes that the approval of the proposed project will not have a significant impact on the quality of the human environment. On July 2, 2002, EPA Region 9 issued a Finding of No Significant Impact for the preferred alternative (Alternative 4).

C-Aquifer Exploratory Drilling Program Near the Villages of Moenkopi, Arizona (January 2004)

The Bureau of Reclamation funded the drilling of a well north of Moenkopi Wash to evaluate the feasibility of development of the C-aquifer in this area. The location is referred to as Well #5 in the 2001 EA. A well was drilled to a total depth of approximately 3,210 feet below ground surface. Preliminary results from the three C-aquifer zones indicated that water quality exceeds EPA secondary drinking water standards for TDS, chloride, sulfate, manganese, and iron. However, the water can be treated to meet EPA secondary drinking water standards, which will require the addition of a reverse osmosis treatment system and associated brine waste lagoon. Testing indicated that the production potential of the well is likely 30 to 100 gpm.

Water Resource Evaluation South of Moenkopi Wash (October 2004)

The Bureau of Reclamation funded the drilling of a well south of Moenkopi Wash to evaluate the feasibility of developing the N-aquifer in this area. A well was drilled to total depth of approximately 760 feet below ground surface. Based on water quality results, the well is suitable to provide drinking water. However, it was determined that the well is likely to yield less than 30 gpm.

VI. ISSUES AND ASSUMPTIONS

Village Approvals

The Lower Village and Upper Village entered into a Memorandum of Agreement (MOA), signed on September 09, 2005, that states that the Village of Lower Moenkopi will connect to the Village of Upper Moenkopi water system as a customer for domestic water service to the Lower Village Administration building and a public bathhouse project to be constructed by the U.S. Indian Health Service (IHS). The MOA provides that the EPA Set-Aside project may proceed with use of the C-Aquifer well and reverse osmosis treatment. Additionally, Upper and Lower Villages have passed resolutions supporting the location of the water treatment plant and brine waste disposal area.

Economic Development

The Moenkopi Developers Corporation (MDC) expressed concerns about the proposed brine waste lagoon and reverse osmosis water treatment plant location citing the possible loss of gravel resources and revenue, since a gravel extraction pit has been designated for the same site in the Upper Moenkopi Village Economic Development Plan. Although MDC supports the water supply and improvement project, they desired further assurances that alternative locations had been fully evaluated and considered.

Recommended alternative sites were reviewed and evaluated, but were determined to be infeasible due to engineering obstacles, geologic constraints, environmental risks, health and human safety issues, and significant cost overruns. On this basis it has been concluded that MDC's concerns are now adequately addressed to the satisfaction of the Village of Upper Moenkopi Governing Board. A specific location for the water treatment plant and brine waste lagoon may now be identified on the mesa top (Figure 2).

Water Quality

The water supply from the C-aquifer well exceeds secondary MCLs for TDS, chloride, sulfate, manganese, and iron. Water will be pre-treated for iron and manganese by filtration and pH adjustment. Reverse osmosis will be used to reduce TDS to levels that allow the water supply to meet the secondary MCLs.

<u>Analyte</u>	<u>Secondary MCL</u>	<u>Result</u>
Chloride	250 mg/L	2240 mg/L
Iron	0.3 mg/L	1 mg/L
Manganese	0.05 mg/L	0.06 mg/L
Sulfate	250 mg/L	257 mg/L
TDS	500 mg/L	3,610 mg/L

Water Treatment Plant and Brine Waste Disposal Area Location

The Lower Village and Upper Village have agreed on a preferred location for the water treatment plant and brine waste disposal area (Figure 2). Although technical representatives have indicated support for the proposed water treatment location, an amended Environmental Assessment must be completed and the Hopi Tribal Council must issue a land use permit before construction can proceed.

Funding

The budget outlined in this submittal exceeds the Drinking Water Tribal Set-Aside funds approved by EPA (Tables 3 through 7). The revised work plan and budget will have an estimated shortfall of approximately \$1,152,409 to complete the project.

WRP will identify and apply for additional project funding. Potential sources of funding include Upper Moenkopi Village, U. S. Bureau of Reclamation (BOR), U.S. Environmental Protection Agency (EPA), Indian Health Service (IHS), U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Agriculture (USDA). Prospects for obtaining enough funding to complete the project are a significant concern.

VII. CHANGES IN WORK PLAN

The WRP is revising the organization and framework of work plan goals for the Moenkopi Set-Aside grant. Changes in the organization of the work plan are addressed in Table 1.

The WRP has included tasks to treat water from the new source well as part of the revised work plan. Installation of a reverse osmosis treatment facility and brine disposal facility were not included in the original work plan.

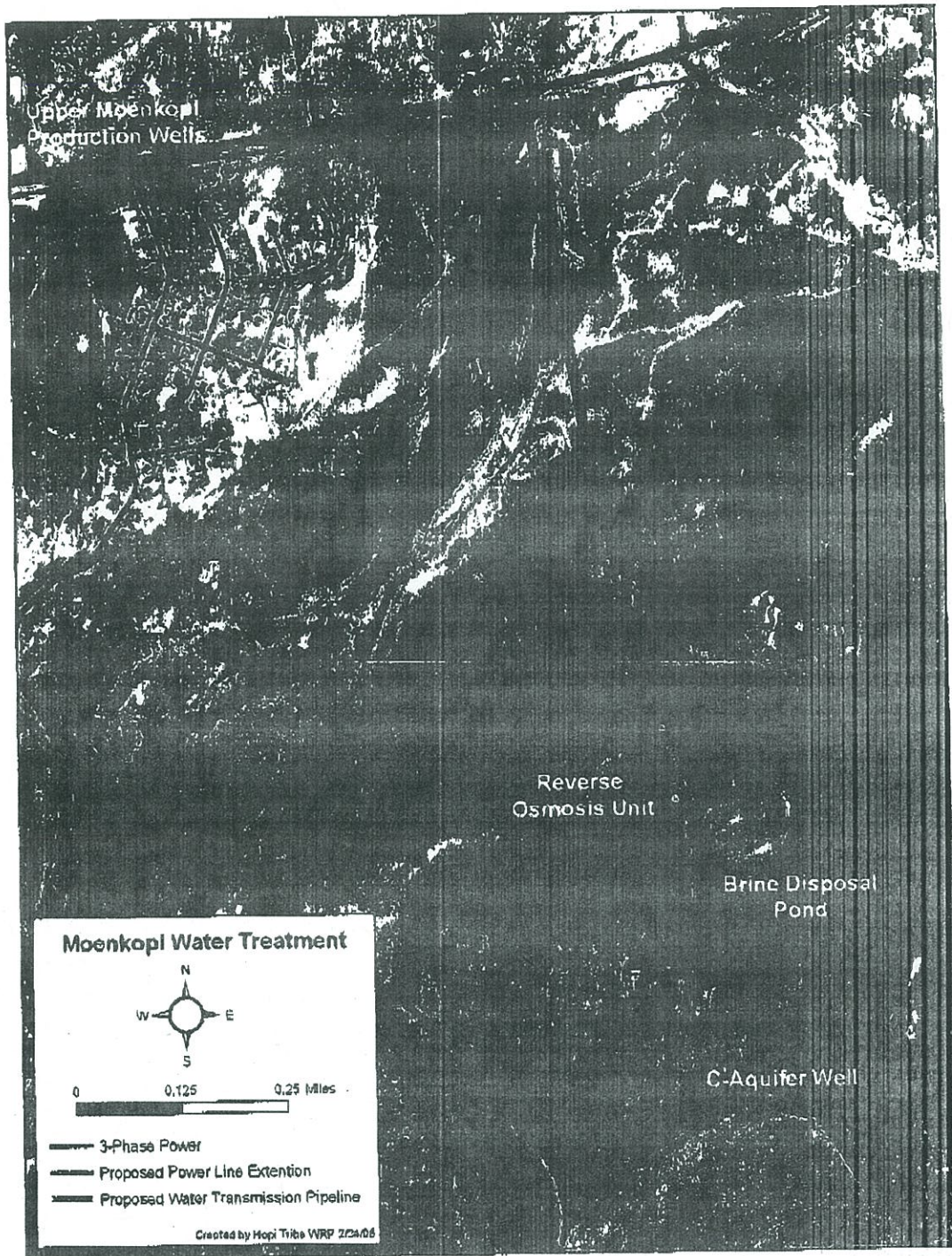


Figure 2. Approximate location of water treatment plant and brine waste disposal area on the mesa top above Upper and Lower Moenkopi Villages.

Table 1. Comparison of original work plan with revised work plan

Original Work Plan	Location of Task within Revised Work Plan
1 Introduction	
2 Initial Contracting Procedures Obtain consultant for Design-Build project	Component A
3 Planning Activities Preliminary plans for construction and design Verify topographic data	Component C
4 Environmental Clearances Environmental Assessment Cultural Resources Inventory Traditional Cultural property consultation USFW Endangered Species Consultation Determine Right of Way (ROW)	Component B
5 Preliminary Design Task Evaluate soil conditions in ROW and construction area Well drilling equipment and well design specs Water System specs Development of construction contract bid docs	Component C
6 Sub-Contract Construction Firms Advertise bids for construction Select bid	Component D
7 Final Design/Design Assistance Completion of final plan and profile sheets, specs and designs Operations and Maintenance Manual Hand Over and Training Plan	Component C
8 Construction Contract for well construction/drilling Drill and test well for production and water quality Complete well construction Water Treatment Installation of water distribution lines Installation of electrical power	Component D
9 Start-Up Operations and Maintenance training for operator Complete system checkout and approval Turn over operation of facilities to Village.	Component D
10 Permits, Bonds and Warranties Contractor to obtain drilling license from WRP Sub-contractors to obtain payment and performance bonds One year warranty for total project system from prime contractor	Component C

VIII. WORK PLAN NARRATIVE

Component A - Project Management

Timeline: October 2000 through November 2009 (Table 2)

Work Plan Output:

- Quarterly reports and an end-of-project report

Environmental Outcome:

- Increased managerial capacity in the Hopi Tribe Water Resources Program
- Increased technical and financial capacity of WRP personnel

WRP staff will perform the following grant and project administrative tasks:

1. Negotiate Work Plan Details with EPA: The Tribe negotiated original work plan details with EPA.
2. Solicit/Procure Professional Consulting and Contractor Services: The Tribe contracted with Arizona Engineering Company (AEC) and Daniel B. Stephens and Associates, Inc. (D.B. Stephens) to provide engineering services. The Tribe will contract with construction companies to implement the construction plans once additional funding is obtained and the Tribe issues a land use permit.
3. Negotiate Revised Work Plan Details: The Tribe will negotiate the revised work plan details with EPA for any work plan revisions.
4. Identify and Apply for Supplemental Project Funding: The Tribe will work to obtain additional funding to supplement EPA funds for the completion of this project.
5. Provide EPA DWTS Grant Management and Reporting: Within 30 days of the end of each fiscal quarter, the Tribe will submit a performance report as part of the joint evaluation requirement with EPA. The report will discuss accomplishments as measured against work plan commitments, the cumulative effectiveness of the work performed under all work plan components, existing and potential problem areas. Quarterly reports will also be provided to the Lower and Upper Villages.
6. Conduct Public Meetings/Present Project Status Reports to Tribal Council: The Tribe will hold meetings to inform the public of the progress being made on the project. Updates will also be given to Tribal Council.
7. Obtain Right of Ways and Assist with Land Assignments: The Tribe will obtain the right of ways necessary for construction and assist Upper Moenkopi with obtaining the land assignments needed for the water treatment plant and brine waste disposal. This task will be completed after the EA has been amended.

Component B - NEPA Contractual Requirements

Timeline: October 2000 through December 2007 (Table 2)

Work Plan Output:

- Feasibility Study Updates
- Environmental Assessment
- Amended Environmental Assessment
- Status of tasks will be discussed in the quarterly reports

Environmental Outcome:

- Compliance with NEPA and Hopi Tribal Ordinance requirements
- Improved record of cultural and biological resources

The NEPA contractual requirements component includes tasks necessary to comply with NEPA and Hopi Tribal Ordinances:

1. Pre-NEPA Planning Activities: "Pre-NEPA Planning for Water Supply System Improvement Project, Upper Village of Moenkopi and Village of Moenkopi (Lower)" was prepared by D.B. Stephens in 2001 and supplied supplemental information to the original Feasibility Study.
2. Environmental Assessment: Environmental Assessment Services produced an Environmental Assessment for the project outlined in the Feasibility Study and the report identified in Task 1. EA was completed in June 2001.
3. Feasibility Study Updates: Feasibility study updates were produced to explore different water supply options when it was discovered that the N-aquifer well did not produce enough water to meet Village needs.
4. Amended Environmental Assessment: A consultant will be contracted to produce an Amended Environmental Assessment in 2007. Biological and cultural surveys will be amended.

Component C - Engineering Design

Timeline: April 2006 through March 2007 (Table 2)

Work Plan Output:

- Construction plans and specifications
- As-built drawings
- Status of tasks will be discussed in the quarterly reports

Environmental Outcome:

- Plans and specifications that result in a properly constructed system
- Construction that proceeds according to the plans and specifications

A description of associated tasks within Component C is listed below:

1. 50% Engineering Design for Water Treatment and Distribution: D.B. Stephens will prepare the 50% engineering design for the water treatment plant and brine waste lagoon. AEC will prepare the 50% engineering design for connection of the water source to the distribution system.
2. 100% Engineering Design for Water System Improvements: D.B. Stephens and AEC will prepare the 90% engineering design for their respective projects. 90% designs will be made available for comment by the Tribe and EPA. The 100% engineering design will incorporate those comments.

Component D - Construction

Timeline: April 2003 through June 2009 (Table 2)

Work Plan Output:

- Status of tasks will be discussed in the quarterly reports

Environmental Outcome:

- Safe and reliable source of drinking water

A description of associated tasks within Component D is listed below:

1. Well Drilling Specifications & Bid Solicitation: Tetra Tech, Inc., a subcontractor for AEC, completed well drilling specifications in 2003. An invitation for bids was sent out. Beeman Drilling Company was awarded a well drilling contract in 2004.
2. Well Drilling Inspections & Reporting: Well drilling along with the inspections and reporting occurred in the first three quarters of 2004. Tetra Tech, Inc. and WRP technicians completed inspection and reporting.
3. Water System and RO Bid Solicitation: A solicitation for bids based on the 100% engineering design will be advertised in accordance with the Hopi Tribe's Fiscal Management Policies. Consultants will prepare the advertisement and assist with the selection of a contractor.
4. Source Water Development: One N-Aquifer well drilling occurred in the first two quarters of 2004, but the water yield was insufficient for the needs of the villages. An additional N-Aquifer well and C-Aquifer well were drilled with BOR funds in 2004.
5. Submersible Pump Installation: The C-Aquifer well will be outfitted with a 30-horsepower submersible pump set at approximately 3,200 feet below ground surface. The pump will be sized to deliver approximately 65 gallons per minute to the raw water storage tank.
6. Electrical Power: An Arizona Public Service (APS) electrical power line extension is necessary to supply power to the C-aquifer well and water treatment compound. APS will need to extend service from Highway 160 or from the Upper Village. The Hopi Tribe's Office of Real Estate Services will work with APS to establish the appropriate easements along the preferred power line right-of-way.
7. Reverse Osmosis Treatment and Brine Disposal Facilities: A 30,000 gallon-per-day skid mounted, 15-hp reverse osmosis unit will be installed. The unit will be equipped for pre-filtration and pH adjustment for removal of suspended sediment, iron and manganese. Other features will include a high-pressure pump immediately upstream of the RO membranes, and a pumping system for discharge of brine solutions to evaporation ponds. The evaporation ponds will be located on the mesa top (Figure 2).
8. Water Transmission Line: A water transmission line will be constructed from the C-aquifer well to the RO system and from the RO system to the Upper Moenkopi distribution system. The pipeline will be constructed of 6" SDR-26 pipe.
9. Construction Support Services: Preparatory support services such as surveying/staking, construction testing and the installation of fencing will be performed under this task or Task 6. Traffic control during construction, as well as cleanup and final restoration is also included.
10. Initial System Start-Up, Repairs, and Troubleshooting: Any deficiencies in the system will be repaired or modified as needed to ensure proper operation of the water system improvements. The Village operator will be trained in the operation of the improved system components during the initial startup phase that is expected to last one week. Upon the Tribe's final approval of system operations, the improvements will be handed over to the Upper Village of Moenkopi for future operation and maintenance. The Contractor will provide a 1-year warranty on all system components. The warranty will begin when WRP issues the final acceptance of the construction.
11. RO, Brine and Water Distribution Inspections and Reporting: WRP technicians will be on site to inspect and report on water system improvement activities. They will keep daily logs with photographs. Consultants will also participate in inspections and reporting.

IX. EPA ROLES AND RESPONSIBILITIES

EPA will participate in the joint evaluation of the Tribe's progress in completing the project. Quarterly reports will be provided by the Tribe and reviewed by EPA. EPA will be the lead agency for the Environmental Assessment and will be directly involved with the consultation activities (e.g., SHPO concurrence, tribal consultation, etc.). EPA will also review and provide comments on engineering design and specifications.

Moenkopi Drinking Water Tribal Supply Set-Aside Project
Grant No. FS-98969501
Budget Summary
February 2007

Table 3. Original Budget Summary

	Description	Cost	Total Expended	Remaining
1	Personnel	0	3,670	0
2	Fringe Benefits	0	0	0
3	Travel	8,000	3,256	4,744
4	Equipment	0	0	0
5	Supplies	6,120	677	5,443
6	Contractual	1,229,880	497,306	732,574
7	Construction	0	0	0
8	Other	15,000	8,682	6,318
9	Total Direct Charges	0	0	0
10	Indirect	0	0	0
	Total	\$1,259,000	\$513,580	\$749,080

Table 4. Revised Budget Summary

	Description	Existing Budget	Revised EPA Budget	Total Project Budget
1	Personnel	0	13,964	59,634
2	Fringe Benefits	0	987	13,159
3	Travel	8,000	3,256	3,256
4	Equipment	0	0	0
5	Supplies	6,120	677	677
6	Contractual	1,229,880	1,227,525	2,372,092
7	Construction	0	0	0
8	Other	15,000	8,682	8,682
9	Total Direct Charges	0	0	0
10	Indirect cost	0	3,909	3,909
	Total	\$1,259,000	\$1,259,000	\$2,461,409

EPA shortfall \$1,202,409
BOR funds* \$50,000
Project Shortfall \$1,152,409

* The Bureau of Reclamation provided the Tribe with a \$50,000 grant to conduct a brine waste disposal evaluation in FY 2006.

**Moenkopi Drinking Water Tribal Set-Aside Project
Grant FS-98969501
February 2007**

Table 5. EPA Project Budget

	<u>Cost</u>	<u>Subtotal</u>	<u>Total</u>
A. PERSONNEL			\$13,964
Grants Administrator salary	\$10,294		
Overtime pay for oversite of well construction (no fringe)	\$3,670		
B. Fringe			\$987
Grants Administrator fringe @ 9.59% (rate for part time)			
C. TRAVEL			\$3,256
Transportation to project meetings			
D. SUPPLIES			\$677
Office supplies such as pens, xerox paper and other supplies			
F. CONTRACTUAL*			\$1,227,525
<u>Component A- Project Management</u>		\$4,975	
1. AEC will prepare USDA grant application		\$4,975	
<u>Component B- NEPA Contractual Requirements</u>		\$224,349	
<u>Pre-NEPA Planning Activities</u>		\$205,881	
	\$10,000		
1. DB Stephens was hired to expand upon the initial feasibility study	\$195,881		
2. AEC was hired to assist with evaluating new project alternatives			
<u>Archeological and Cultural Resources Inventory</u>		\$8,533	
1. HCPO conducted survey for project area	\$5,000		
2. HCPO will conduct survey of updated area	\$3,533		
<u>Biological Resources Inventory</u>		\$4,284	
1. ETD, Inc. for Biological Survey	\$1,550		
2. Wildlife T&E survey	\$750		
3. Plants T&E survey	\$0		
4. Updated Biological Survey	\$1,420		
5. Legal survey (well site \$264, R.O. site \$300)	\$564		
<u>Environmental Assessment</u>		\$5,651	
1. EAS, Inc. was hired to conduct an Environmental Assessment	\$3,406		
2. EAS, Inc. will be hired to conduct an E.A. Amendment	\$2,245		
<u>Component C- Engineering Design</u>		\$81,275	
1. Engineering Design - Limit of 10.6151% of EPA funded construction costs	\$33,775		
2. Engineering Design - Reverse Osmosis	\$47,500		

Component D- Construction**\$916,927****Construction Support Services****\$151,276**

1. AEC will provide bidding and construction management for the water distribution system construction

- a. Bidding assistance \$8,101
- b. Construction management \$27,541

2. AEC will provide construction assistance for the water distribution system construction

- a. Construction surveying/staking \$19,240
- b. Construction testing \$19,240
- c. Traffic Control \$5,000
- d. Cleanup and final restoration \$12,826

3. DBS&A will provide bidding and construction assistance for the RO system and brine waste lagoon construction

- a. Bidding assistance (see total budget)
- b. Construction management \$59,328

Well drilling**\$317,215****Submersible pump installation****\$58,800**

- 1. Submersible Pump (30hp) and control panel \$15,000
- 2. 3" Diameter Corrosion Resistant Discharge Pipe \$18,000
- 3. Submersible Power Cable \$6,500
- 4. 3" Check Valve \$900
- 5. 1" Diameter Water level Access Tube \$2,400
- 6. Pitless Adapter Unit \$10,000
- 7. Concrete Well Head Slab \$2,000
- 8. Misc. Plumbing, Fittings \$2,500
- 9. Well Disinfection \$1,500

30,000 Gallon Raw Water Storage Tank**\$43,000**

- 1. Tank Foundation (27' Diameter) \$3,200
- 2. 30,000 Gallon Vented Fiberglass storage tank \$28,000
- 3. Tank Disinfection \$1,000
- 4. 6" Gate Valves @ 3 ea. \$600 \$1,800
- 5. 6", 8", and 10" Ductile Iron Yard Piping @ 50 ea. @ \$40 \$2,000
- 6. Overflow splash pad and rip-rap \$1,000
- 7. Millitronics Hydromanager Ultrasonic Level equipment \$4,000
- 8. Electrical Connections, lighting, etc. \$2,000

Electrical Power to Well and Treatment Building Site**\$181,000**

- 1. APS Electrical Power Line extension \$120,000
- 2. Utility Service Connection at Treatment Building \$25,000
- 3. Standby generator \$36,000

Reverse Osmosis Skid Mount Module**\$95,246**

- 1. 30,000 GPD Skid Mount RO Module with Pretreatment \$75,246
- 2. Ancillary Piping, Valves, Brine Disposal Pump \$5,000

3. Electrical Controls	\$5,000
4. Equipment Startup and Testing	\$10,000

Finishing Tank	\$33,930
1. Excavation, backfill, and compaction	\$5,250
2. Reinforced concrete	\$9,900
3. Access hatches	\$1,000
4. Piping	\$1,280
5. Electrical controls and instrumentation	\$2,500
6. Painting and coatings	\$5,500
7. Liquid Sodium Hypochlorite Disinfection System	\$1,500
8. Booster pumps	\$7,000

Construction Subtotal	\$729,191
6% Change Order	\$36,460

* The following procedures from the Hopi Tribe Procurement Manual will be followed when creating contracts:

- Procurements of up to \$5,000 may be awarded on the basis of verbal quotations without competition (Section 7(A)(1)).
- Procurements of \$5,001 to \$25,000 may be awarded on the basis of competitive quotations provided verbally to the awarding official (Section 7(A)(3)).
- Procurements of \$25,001 to \$60,000 may be awarded on the basis of competitive quotations provided verbally to the awarding official (Section 7(A)(3)).
- The Tribal Council reserves to itself approval of all procurement actions exceeding \$60,000 (Section 7(A)(3)).

H. OTHER	\$8,682
Gas, Oil & Lube	\$6,530
Purchase of gas, oil & lube for use in leased vehicles	
Seminar and Training	\$375
Printing/Binding	\$1,546
Professional printing and binding of documents such as reports, agreements, etc., as needed.	
General Operating Supplies (Software)	\$231

I. INDIRECT COST @ 12.42% of all non-contractual	\$3,909
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EPA Project Cost	\$1,259,000
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Moenkopi Drinking Water Tribal Supply Set-Aside Project
Grant No. FS-98969501
Budget Summary
February 2007

Table 3. Original Budget Summary

	Description	Cost	Total Expended	Remaining
1	Personnel	0	3,670	0
2	Fringe Benefits	0	0	0
3	Travel	8,000	3,256	4,744
4	Equipment	0	0	0
5	Supplies	6,120	677	5,443
6	Contractual	1,229,880	497,306	732,574
7	Construction	0	0	0
8	Other	15,000	8,682	6,318
9	Total Direct Charges	0	0	0
10	Indirect	0	0	0
	Total	\$1,259,000	\$513,590	\$749,080

Table 4. Revised Budget Summary

	Description	Existing Budget	Revised EPA Budget	Total Project Budget
1	Personnel	0	13,964	59,634
2	Fringe Benefits	0	987	13,159
3	Travel	8,000	3,256	3,256
4	Equipment	0	0	0
5	Supplies	6,120	677	677
6	Contractual	1,229,880	1,227,525	2,372,092
7	Construction	0	0	0
8	Other	15,000	8,682	8,682
9	Total Direct Charges	0	0	0
10	Indirect cost	0	3,909	3,909
	Total	\$1,259,000	\$1,259,000	\$2,461,409

EPA shortfall \$1,202,409
BOR funds* \$50,000
Project Shortfall \$1,152,409

* The Bureau of Reclamation provided the Tribe with a \$50,000 grant to conduct a brine waste disposal evaluation in FY 2006.

**Moenkopi Drinking Water Tribal Set-Aside Project
EPA Grant No. FS-98969501
February 2007**

Table 7. Additional Funding Budget

	cost	subtotal	total
<u>Personnel</u>		\$57,842	\$57,842
Grants Manager salary (2080 hours @ 22.00 per hour over 2 years)	\$45,670		
Fringe at 26.6%	\$12,172		
<u>Engineering Design</u>			
Brine waste disposal lagoon siting and preliminary engineering design	\$50,000	\$50,000	\$50,000
<u>Construction Support Services</u>			
Reverse Osmosis Treatment System bidding assistance	\$12,300	\$12,300	\$12,300
<u>Construction</u>			\$1,082,237
Water Transmission Pipeline			
1. 6" SDR-26 Pipe Installed (trench, backfill, and compaction) 7,810'	\$390,500	\$418,025	
2. 6" water main appurtenances	\$19,525		
3. 6" connection to existing water line	\$5,000		
4. Clear and Grub	\$3,000		
Reverse Osmosis Treatment and Operation Building		\$192,700	
1. Yard Piping	\$5,000		
2. Pre-Engineered Structure (30X40")	\$120,000		
3. Electrical and instrumentation system	\$10,000		
4. Interior Piping	\$2,500		
5. Operations and Maintenance Equipment	\$5,000		
6. Lighting and heating/cooling	\$5,000		
7. Disinfection Equipment	\$10,000		
8. Control Room Equipment (SCADA)	\$20,000		
9. Perimeter fencing	\$15,200		
Brine Waste Disposal System		\$420,005	
1. 4" diameter waste discharge piping, installed	\$7,500		
2. Evaporation Pond Excavation (4 acres x 4' deep cut/fill)	\$39,975		
3. 60 mil HDPE Pond liner Material	\$268,980		
4. Backfill and compaction of 1' High berms	\$8,750		
5. Site Perimeter Fencing (6' Chain Link)	\$47,320		
6. Site Landscaping and Revegetation	\$10,000		
7. Monitoring wells (3)	\$37,500		
Construction Subtotal		\$1,030,730	
5% Change Order Allowance		\$51,537	

Total Other Funding Sources \$1,202,409

Bureau of Reclamation Funding \$50,000
Other Funding Sources Needed \$1,162,409

* The following procedures from the Hopi Tribe Procurement Manual will be followed when creating contracts:

- Procurements of up to \$5,000 may be awarded on the basis of verbal quotations without competition (Section 7(A)(1)).
- Procurements of \$5,001 to \$25,000 may be awarded on the basis of competitive quotations provided verbally to the awarding official (Section 7(A)(3)).
- Procurements of \$25,001 to \$60,000 may be awarded on the basis of competitive quotations provided verbally to the awarding official (Section 7(A)(3)).
- The Tribal Council reserves to itself approval of all procurement actions exceeding \$60,000 (Section 7(A)(3)).

Moenkopi Drinking Water Tribal Set-Aside Project
Grant FS-98969501
February 2007

Table 6. Total Project Budget

Note. Light-colored and italicized text indicates budget items for which WRP will be seeking additional funding.

	<u>Cost</u>	<u>Subtotal</u>	<u>Total</u>
A. PERSONNEL			\$59,634
Grants Administrator salary (EPA Funded)		\$10,294	
Additional salary for Grants Administrator		\$45,670	
Overtime pay (no fringe)		\$3,870	
B. FRINGE			
Grants Administrator fringe @ 9.59% (EPA funded)		\$987	\$13,159
Additional Grants Administrator fringe at 26.6%		\$12,172	
C. TRAVEL			\$3,256
Transportation to project meetings			
D. SUPPLIES			\$677
Office supplies such as pens, xerox paper and other supplies			
F. CONTRACTUAL*			\$2,372,082
<u>Component A- Project Management</u>		\$4,975	
1. AEC will prepare USDA grant application	\$4,975	\$4,975	
<u>Component B- NEPA Contractual Requirements</u>		\$224,349	
<u>Pre-NEPA Planning Activities</u>		\$205,881	
1. DB Stephens was hired to expand upon the initial feasibility study	\$10,000		
2. AEC was hired to assist with evaluating new project alternatives	\$195,881		
<u>Archeological and Cultural Resources Inventory</u>		\$8,633	
1. HCPO conducted survey for project area	\$5,000		
2. HCPO will conduct survey of updated area	\$3,533		
<u>Biological Resources Inventory</u>		\$4,284	
1. ETD, Inc. for Biological Survey	\$1,550		
2. Wildlife T&E survey	\$750		
3. Plants T&E survey	\$0		
4. Updated Biological Survey	\$1,420		
5. Legal survey (well site \$264, R.O. site \$300)	\$564		
<u>Environmental Assessment</u>		\$5,651	
1. EAS, Inc. was hired to conduct an Environmental Assessment	\$3,406		
2. EAS, Inc. will be hired to conduct an Environmental Assessment Amendment	\$2,245		
<u>Component C- Engineering Design</u>		\$131,276	
1. Engineering Design - Limit of 10.6151% of EPA funded construction costs	\$33,775		
2. Brine waste disposal lagoon siting and preliminary engineering design	\$50,000		
3. Engineering Design - Reverse Osmosis	\$47,500		

	<u>Cost</u>	<u>Subtotal</u>	<u>Total</u>
<u>Component D- Construction</u>		\$2,011,493	
Construction Support Services		\$163,576	
1. AEC will provide bidding and construction management for the water distribution system construction			
a. Bidding assistance	\$8,101		
b. Construction management	\$27,541		
2. AEC will provide construction assistance for the water distribution system construction			
a. Construction surveying/staking	\$19,240		
b. Construction testing	\$19,240		
c. Traffic Control	\$5,000		
d. Cleanup and final restoration	\$12,826		
3. DBS&A will provide bidding assistance for the RO system and brine waste lagoon construction. AEC will provide construction management with consultation from DB Stephens.			
a. Bidding assistance	\$12,300		
b. Construction management	\$59,328		
Well drilling		\$317,215	
Water Transmission Pipeline			
1. 6" SDR-26 Pipe Installed (trench backfill and compaction) 7.810'		\$418,025	
	\$390,500		
2. 6" water main appurtenances	\$19,525		
3. 6" connection to existing water line	\$5,000		
4. Clear and Grub	\$3,000		
Submersible pump Installation		\$58,800	
1. Submersible Pump (30hp) and control panel	\$15,000		
2. 3" Diameter Corrosion Resistant Discharge Pipe	\$18,000		
3. Submersible Power Cable	\$6,500		
4. 3" Check Valve	\$900		
5. 1" Diameter Water level Access Tube	\$2,400		
6. Pitless Adapter Unit	\$10,000		
7. Concrete Well Head Slab	\$2,000		
8. Misc. Plumbing, Fittings	\$2,500		
9. Well Disinfection	\$1,500		
30,000 Gallon Raw Water Storage Tank		\$43,000	
1. Tank Foundation (27' Diameter)	\$3,200		
2. 30,000 Gallon Vented Fiberglass storage tank	\$28,000		
3. Tank Disinfection	\$1,000		
4. 6" Gate Valves @ 3 ea. \$600	\$1,800		
5. 6", 8", and 10" Ductile Iron Yard Piping @ 50 ea. @ \$40	\$2,000		
6. Overflow splash pad and rip-rap	\$1,000		
7. Millitronics Hydromanager Ultrasonic Level equipment	\$4,000		
8. Electrical Connections, lighting, etc.	\$2,000		
Electrical Power to Well and Treatment Building Site		\$181,000	
1. APS Electrical Power Line extension	\$120,000		
2. Utility Service Connection at Treatment Building	\$25,000		
3. Standby generator	\$36,000		
Reverse Osmosis Treatment and Operation Building		\$192,700	
1. Yard Piping	\$5,000		
2. Pre-Engineered Structure (30X40")	\$120,000		
3. Electrical and instrumentation system	\$10,000		

	<u>Cost</u>	<u>Subtotal</u>	<u>Total</u>
4. Interior Piping	\$2,500		
5. Operations and Maintenance Equipment	\$5,000		
6. Lighting and heating/cooling	\$5,000		
7. Disinfection Equipment	\$10,000		
8. Control Room Equipment (SCADA)	\$20,000		
9. Perimeter fencing	\$15,200		
Brine Waste Disposal System		\$420,005	
1. 4" diameter waste discharge piping, installed	\$7,500		
2. Evaporation Pond Excavation (4 acres x 4' deep cut/fill)	\$39,975		
3. 60 mil HDPE Pond liner Material	\$268,960		
4. Backfill and compaction of 1' High berms	\$8,750		
5. Site Perimeter Fencing (6' Chain Link)	\$47,320		
6. Site Landscaping and Revegetation	\$10,000		
7. Monitoring wells (3)	\$37,500		
Reverse Osmosis Skid Mount Module		\$95,246	
1. 30,000 GPD Skid Mount RO Module with Pretreatment	\$75,246		
2. Ancillary Piping, Valves, Brine Disposal Pump	\$5,000		
3. Electrical Controls	\$5,000		
4. Equipment Startup and Testing	\$10,000		
Finishing Tank		\$33,930	
1. Excavation, backfill, and compaction	\$5,250		
2. Reinforced concrete	\$9,900		
3. Access hatches	\$1,000		
4. Piping	\$1,280		
5. Electrical controls and instrumentation	\$2,500		
6. Painting and coatings	\$5,500		
7. Liquid Sodium Hypochlorite Disinfection System	\$1,500		
8. Booster pumps	\$7,000		
Construction Subtotal (not including Construction Support Services)		\$1,758,921	
5% Change Order Allowance		\$87,996	
<p>* The following procedures from the Hopi Tribe Procurement Manual will be followed when creating contracts:</p> <ul style="list-style-type: none"> - Procurements of up to \$5,000 may be awarded on the basis of verbal quotations without competition (Section 7(A)(1)). - Procurements of \$5,001 to \$25,000 may be awarded on the basis of competitive quotations provided verbally to the awarding official (Section 7(A)(3)). - Procurements of \$25,001 to \$80,000 may be awarded on the basis of competitive quotations provided verbally to the awarding official (Section 7(A)(3)). - The Tribal Council reserves to itself approval of all procurement actions exceeding \$80,000 (Section 7(A)(3)). 			
H. OTHER			\$8,662
Gas, Oil & Lube		\$6,530	
Purchase of gas, oil & lube for leased vehicles, for use in the			
Seminar and Training		\$375	
Printing/Binding		\$1,546	
Professional printing and binding of documents such as reports, agreements, etc., as needed.			
General Operating Supplies (Software)		\$231	
I. INDIRECT COST @ 12.42 % of all non-contractual			\$9,909

Total Project Cost **\$2,461,409**

EPA Tribal Set Aside Funding **\$1,259,000**

Other Funding Sources **\$1,202,409**

BUDGET INFORMATION - Non-Construction Programs

OMB Approval No. 0348-0044

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1.		\$ 1,259,000.00	\$	\$	\$	\$ 1,259,000.00
2.						0.00
3.						0.00
4.						0.00
5. Totals		\$ 1,259,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 1,259,000.00

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) Revised Moenkopi S	(2)	(3)	(4)	
a. Personnel	\$ 13,964.00	\$	\$	\$	\$ 13,964.00
b. Fringe Benefits	987.00				987.00
c. Travel	3,256.00				3,256.00
d. Equipment	0.00				0.00
e. Supplies	677.00				677.00
f. Contractual	1,227,525.00				1,227,525.00
g. Construction	0.00				0.00
h. Other	8,682.00				8,682.00
i. Total Direct Charges (sum of 6a-6h)	1,255,091.00	0.00	0.00	0.00	1,255,091.00
j. Indirect Charges	3,909.00				3,909.00
k. TOTALS (sum of 6i and 6j)	\$ 1,259,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 1,259,000.00
7. Program Income	\$	\$	\$	\$	\$ 0.00

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